



Setting Standards for Excellence

July 2, 2002

Docket # 01-BSTD-1

Robert Pernell, Commissioner, Presiding Member
Arthur H. Rosenfeld, Commissioner, Associate Member
2005 Update Residential & Nonresidential Building Standards Proceeding
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Dear Messrs. Pernell and Rosenfeld:

NEMA appreciates the opportunity to comment on the California Energy Commission 2005 Update Residential & Nonresidential Building Standards, Title 24. We are reviewing the top 28 priority measures made available online March 14, 2002. This communication addresses one lighting matter on the priority list.

The National Electrical Manufacturers Association (NEMA) is the leading trade association in the United States representing the interests of electroindustry manufacturers. Its 500 member companies manufacture products used in the generation, transmission and distribution, control, and end-use of electricity. Annual shipments of these products total \$100 billion.

The topic below is given the same title as in the associated material on your website. NEMA reserves the right to offer further comments on these and other matters in this proceeding.

Lighting Controls Under Skylights

The NEMA Controls group agrees with the basic strategy for daylighting outlined in the proposal:

- Focus on skylighting vs. window wall applications since it's easier to ensure a successful installation.
- Require skylights in "big box" retail and warehouse applications where the technology has already been proven.
- Specify the performance of the skylights and automatic controls.
- Allow astronomical time clocks in lieu of photocontrols.

Our recommendations here are directed at clarifying the intent of the proposal as it relates to automatic controls and making suggestions for improvement.

Requirements for Automatic Multi-Level Daylighting Controls

© **Automatic Multi-level Daylighting Control Devices.** Automatic multi-level daylighting control devices shall:

1. Be capable of automatically reducing the general lighting in the controlled area in multiple steps in response to available daylight while maintaining a reasonably uniform level of illuminance. These controls shall have at least one control step that is between 50% and 70% of design illuminance and the controlled electric lighting shall consume less than 35% of rated power at minimum light output. A reasonably uniform level of illuminance in an area shall be achieved in a manner described in Section 131 (b)

Recommendations:

The use of “50% to 70%” and “consume less than 35% at the minimum setting” is confusing. Does 0%, 50% and 100% comply? Yes, but only when the specifier thinks outside the box and notes that 0% is the minimum and definitely consumes less than 35% of the rated power.

A better approach may be to require two relays per control zone. The two would be wired to provide 0-50-100% or 0-33-66-100%.

2. OK

3. OK

4. If the device uses step switching, the device shall have sufficient separation (deadband) of on and off points for each step of control to prevent cycling

Recommendation:

The above assumes a closed loop system where the actuation of the electric lights impacts the level being read by the sensor. Open loop control, which is the recommended approach in this proposal, does not have this problem. Rewrite to clarify.

5. OK

6. If the device uses step switching, status of each control step will be annunciated by an indicator light on the control device

Recommendation:

The same requirements should be placed on a dimming device

7. If the device has a time delay, the time delay shall be capable of being overridden or set to less than 5 seconds time delay for the purpose of commissioning

Recommendation:

The time delay should automatically reset to normal after a reasonable period (1 hour)

- 8. OK
- 9. OK
- 10. OK

Prescriptive Requirements for Skylights in Large Low-Rise Nonresidential Buildings

Low rise enclosed spaces having all of the characteristics of A-D below

A. greater than 25,000 square feet

B. directly under a roof

C. with ceiling heights greater than 15 ft

D. having a lighting power density for general lighting equal to or greater than 0.5 W/SF.

Recommendation:

Add a footnote giving the definition for "low-rise" and stating whether multi-story buildings would be included.

Again, thank you for the opportunity to comment. I look forward to working with you further on the 2005 amendments under development.

Sincerely yours,



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